

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Office of Engineering and Technology Releases)	ET Docket No. 13-26
and Seeks Comment on Updated OET-69)	
Software)	GN Docket No. 12-268

REPLY COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®

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I. INTRODUCTION AND SUMMARY

CTIA – The Wireless Association® (“CTIA”)¹ respectfully submits these reply comments in response to the Office of Engineering and Technology (“OET”) Public Notice seeking comment on the release of the updated OET Bulletin No. 69 (“OET-69”) software.² As CTIA indicated in its initial comments and as filings in the opening round demonstrate, the updated OET-69 implementing software holds great promise and will be a valuable tool to stakeholders in the Commission’s incentive auction process. The updated software, called *TVStudy*, is more accurate than the previous implementing software, runs more quickly than past software and is more user-friendly than the previous version. In its comments, the National Association of Broadcasters (“NAB”) and certain of its broadcaster members claim that *TVStudy* will result in dramatic coverage losses, but these comments misunderstand the changes to the software suggested by the Commission. The goal is to have accurate coverage, whatever it may

¹ CTIA – The Wireless Association® is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization includes Commercial Mobile Radio Service (“CMRS”) providers and manufacturers, including cellular, Advanced Wireless Service, 700 MHz, broadband PCS, and ESMR, as well as providers and manufacturers of wireless data services and products.

² *Office of Engineering and Technology Releases and Seeks Comment on Updated OET-69 Software*, Public Notice, DA 13-138 (Feb. 4, 2013) (“Public Notice”).

be. CTIA believes that utilization of the new software can help to achieve Congress' and the Commission's goals of facilitating a data-driven repacking process, that also maximizes the ability of stakeholders to participate in various aspects of the incentive auction. In sum, and as CTIA noted in its initial comments, the changes proposed by the Commission will result in more accurate calculations of the geographic coverage and population served of television stations. It will also offer an improved user experience and allow interested parties to gather a wider and more accurate range of information to inform their decisions on incentive auction participation.

The Commission's proposal to adopt the updated OET-69 software is also consistent with the directives of the Middle Class Tax Relief and Job Creation Act of 2012 (the "Spectrum Act").³ In its comments, NAB asserts that the Commission's proposal to adopt updated software to implement OET-69 would violate the Spectrum Act. NAB raises a variety of legal arguments that the Commission should reject. Contrary to NAB's assertions, the Commission does not propose to change the "methodology described in OET Bulletin 69." Instead, the Commission proposes to take advantage of technological and data developments that will allow for a more faithful implementation of the methodology of OET-69 than was possible before. Further, OET's proposed update of the software is consistent with the Spectrum Act's statement that the Commission "make all reasonable efforts" to preserve the coverage area and population served of each broadcast television licensee. To honor that goal, the Commission should know as accurately as possible the coverage area and population of each broadcaster. NAB's argument is also premised on its incorrect interpretation of the Spectrum Act as "freezing" OET-69 as of the date of the Spectrum Act's enactment. Finally, OET's proposal to update the OET-69

³ Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6407(b), 126 Stat. 156 (2012) ("Spectrum Act").

implementing software is consistent with the Commission's procedural requirements, i.e. referral to the full Commission on this issue is not necessary.

II. THE UPDATED OET-69 SOFTWARE PROPOSED BY THE COMMISSION WILL PROMOTE A DATA-DRIVEN, EFFICIENT REPACKING.

The incentive auction proposed by the Commission is highly complex, yet necessary to ensure the continued benefits of mobile broadband. The broadcast television repacking process is a particularly challenging element of the incentive auction. For all parties to understand accurately the use of the spectrum by incumbent TV broadcasters, OET-69 implementing software is needed to calculate the coverage and interference effects associated with existing TV stations. The creation of a more updated and consistent software program to implement OET-69 is a logical step that will allow the Commission the ability to input the results into the overarching algorithm to be used as part of the incentive auction and repacking process.

Indeed, the updated software has the endorsement of Communications Technologies, Inc., a lead broadcast engineering consulting firm with nearly three decades of experience.⁴ In its Comments, Communications Technologies discusses and endorses all eight of the Commission's proposed changes to the OET-69 software. Communications Technologies also notes that "[t]he inclusion of Canadian census data, multiple terrain databases and provision for Mexican census data, along with improved computation time are believed to be potentially beneficial improvements to the current OET-69 mainframe software used for allocation studies."⁵ The endorsement of a long-standing, prominent broadcast engineering firm speaks to the substantial practical improvements contained in the updated OET-69 software.

⁴ Comments of Communications Technologies, Inc., ET Docket No. 13-26, GN Docket No. 12-268, at 1 (March 21, 2013) ("Communications Technologies Comments").

⁵ *Id.*

CTIA agrees with the Consumer Electronics Association (“CEA”) that the updated OET-69 software “will further the ultimate goal of the Spectrum Act to reallocate broadcast spectrum to wireless broadband and will assist the FCC in meeting the ‘all reasonable efforts’ statutory criteria for repacking broadcast stations.”⁶ Indeed, and as commenters noted in their initial filings, the new software offers a variety of improvements over past iterations. The use of 2010 census data, for example “will allow the most accurate calculation of population served within full service station noise limited contours and Class A designated contours.”⁷ Conversely, “[g]iven these dramatic changes [in population since 1990], continuing to use 20-year old population data from the 1990 U.S. Census would be unreasonable and poor engineering.”⁸

The updated OET-69 software also uses more granular terrain data than the previous software. The original software relied upon three-arcsecond digital terrain data, which resulted in land elevations being reported approximately every 300 feet.⁹ The new software uses one-arcsecond terrain data, which “can more accurately predict actual coverage and interference for TV stations than the three-arcsecond terrain database used in the previous implementation of OET-69.”¹⁰ Further, because the three-arcsecond terrain database is no longer being supported, updated, or corrected by the U.S. Geological Survey, it would be unreasonable for the Commission to continue using it. And, as CEA observed, by providing one-arcsecond terrain

⁶ Comments of the Consumer Electronics Association, ET Docket No. 13-26, GN Docket No. 12-268, at 2 (March 21, 2013) (“CEA Comments”).

⁷ Communications Technologies Comments at 1.

⁸ CEA Comments at 4.

⁹ Public Notice at 4.

¹⁰ CEA Comments at 4. *See also* Communications Technologies Comments at 1 (“The use of the highest accuracy SRTM terrain database available for each geographic region is supported as use of this data would presumably result in the most accurate calculation of signal levels.”).

data to all parties free of charge, OET is ensuring that all parties will get consistent results from the software, another result clearly in the public interest.¹¹

Commenters correctly observed that the updated software also would correct known errors in the previous version, thus increasing the accuracy of coverage area and interference calculations.¹² Such error correction is “[g]ood engineering practice,” and is an important element of the updated software.¹³ Similarly, by using full-precision location data instead of truncated geographic coordinates, the *TVStudy* software “eliminates rounding errors that existed in the previous implementation and provides some three additional orders of precision.”¹⁴

Not only does the new software improve upon the previous iteration, but it also contains features that will be necessary to conduct the incentive auction. As CEA notes, *TVStudy* enables the creation and maintenance of a database of interference status using a uniform global grid, which will be necessary for the Commission to evaluate the “daisy chain” effect of interference caused by a potential modification of a single station.¹⁵ The new software also allows for a better user experience and more robust use by all interested parties. The updated OET-69 software contains a graphical user interface based on Java, as well as an analysis engine in C. The previous software relied solely upon FORTRAN, a programming language that is much less widely used than C.

¹¹ CEA Comments at 5.

¹² CEA Comments at 5; Communications Technologies Comments at 2.

¹³ CEA Comments at 6.

¹⁴ *Id.*

¹⁵ *Id.* at 7.

As a result, the new software is easier to use, provides more usable outputs (such as data that can be easily mapped by mapping software) and can be integrated into comprehensive repacking software that will allow the Commission to analyze a variety of potential auction outcomes. *TVStudy* also executes much more quickly than the previous implementation, and its operating parameters can be modified more easily. Ease of use is a critical element given the need for all interested parties to make informed decisions in the context of the incentive auction.

In sum, and as CTIA noted in its initial comments, the changes proposed by the Commission will result in more accurate calculations of the geographic coverage and population served of television stations. It will also offer an improved user experience and allow interested parties to gather a wider and more accurate range of information to inform their decisions on incentive auction participation. These features “provide the flexibility and capabilities necessary to effectively analyze the repacking of broadcast stations, an essential requirement of the Spectrum Act.”¹⁶

III. NAB MODELING USES AN APPROACH NOT CONSIDERED IN THE PUBLIC NOTICE.

NAB opposes the adoption of *TVStudy* on the basis that “it will effectively redefine and seriously reduce the coverage for a significant number of television stations.”¹⁷ As mentioned above, the goal should not be to reduce coverage, but to accurately record coverage, whatever that may be. In support of its finding, NAB and its technical consultants have purported to demonstrate the real-world impact of the updated OET-69 software on the predicted coverage of

¹⁶ CEA Comments at 8.

¹⁷ Comments of the National Association of Broadcasters, Fox Entertainment Group, CBS Corporation, NBCUniversal, LLC, ABC Owned Television Stations, ABC Television Affiliates Association, CBS Television Network Affiliates Association, FBC Television Affiliates Association, and NBC Television Affiliates, ET Docket No. 13-26, GN Docket No. 12-268, at 13 (March 21, 2013) (“NAB Comments”).

particular television stations. CTIA believes, however, that NAB’s comments do not appear to correctly interpret the proposals made by the Commission for changes to the *TVStudy* software. When modeled using the proposals considered by OET in Bulletins 72 and 73, the difference in reported population coverage from the current software to *TVStudy* is much less than NAB suggests, and in any event the results are more consistent with real-world coverage delivered to the viewing public.

A. OET Did Not Propose To “Assume Interference” For “Flagged” Cells.

In the Public Notice, the Commission explains that “terrain profiles lying outside the range of collected data still produce results, but those results are ‘flagged’ as being ‘unusable or dubious.’”¹⁸ The original OET-69 software treated “flagged” cells within the noise-limited contour as having coverage, regardless of the signal strengths that were calculated.¹⁹ The Commission notes, however, that “a different approach was taken in implementing OET Bulletins 72 and 73” and that in these Bulletins, “the Commission found that ignoring the appearance of so-called ‘error codes’ and accepting the calculated field strength value was appropriate. . .”²⁰ OET then asks whether it should continue to assume coverage in areas that have “flagged” cells or whether it should adopt another approach.²¹ As CTIA understands it, OET is suggesting two potential approaches for treatment of “flagged” cell data: (1) no change to past software, such that any “flagged” cell data is considered “covered” or (2) as was done in OET 72/73, disregarding the “flag” and considering the signal strength levels predicted

¹⁸ Public Notice at 5.

¹⁹ *Id.*

²⁰ *Id.* at 5-6.

²¹ *Id.* at 6.

notwithstanding the “flag.” Notably, in the latter case, many “flagged” cells will result in a determination of coverage because the prediction methodology may return a high level of signal strength.

The developmental *TVStudy* software has three options for Longley-Rice error handling: Disregard, Assume Service, and Assume Interference.²² Notably, the Commission’s Public Notice discussed the “Disregard” and “Assume Service” options but did not mention the “Assume Interference” option.²³ Under the “Disregard” option, the software will always use the path-loss value returned, regardless of the error marker.²⁴ With “Assume Service,” cells in which the desired-signal path returns an error marker are assumed to have interference-free service, and undesired signals are not checked.²⁵ Finally, under “Assume Interference,” “flagged” cells are assumed to have no service, and undesired signals for paths that return an error marker are assumed to cause interference.²⁶

NAB’s comments focused solely on an “Assume Interference” approach that is not proposed by the Commission within the Public Notice. In the Declaration of Victor Tawil attached to its comments, NAB states that “[t]rials adopting OET’s proposed change in the treatment of ‘flagged’ cells—from assuming service to assuming interference—reduced the predicted coverage areas and population served for 97.3% of existing full power and Class A

²² TVStudy Operating Instructions (March 11, 2013), *available at* <http://data.fcc.gov/download/incentive-auctions/OET-69/>.

²³ Public Notice at 5-6.

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

television stations.”²⁷ NAB provides two examples in support of its finding: KMTP-TV in San Francisco, California²⁸ and KWPX-TV in Bellevue, Washington. NAB stated that KMTP-TV is calculated to serve 6,665,289 people using the “Assume Service” setting but that the population served would be reduced to 4,233,630 viewers using the “Assume Interference” setting.²⁹ The result is a predicted loss of 36.4% of the total audience.³⁰ For KWPX-TV, the population served would go from 4,133,310 to 2,727,771 viewers (a 34% loss) using the same setting.³¹

However, the Commission has never suggested that it is proposing to use the “Assume Interference” setting for handling of “flagged” cells. Indeed, such a proposal would not make sense – in effect, any “flagged” cell would be assumed to not provide any coverage and would lead to an extensive drop in predicted coverage that has no basis in OET-69. This approach is also inconsistent with the software used to implement OET-72 or OET-73. Nowhere does the Commission propose to use the approach that NAB used in its analysis. To the extent the Public Notice advances a proposal at all, it is to adopt the OET-72 and OET-73 approach of accepting the calculated field strength value for “flagged” cells.³² The “Assume Interference” method is not mentioned at all. Further, NAB states that the Commission proposes “to disregard ‘flagged’ cells altogether.”³³ But OET’s proposal is not to “disregard ‘flagged’ cells altogether,” it is to

²⁷ Declaration of Victor Tawil at ¶ 12, attached to NAB Comments (“Tawil Declaration”).

²⁸ The Tawil Declaration erroneously states that this station is licensed in Sacramento, California.

²⁹ Tawil Declaration at ¶ 12.

³⁰ *Id.*

³¹ *Id.*

³² Public Notice at 6.

³³ Tawil Declaration at ¶ 13.

disregard the warning associated with the Longley-Rice predictions and to use the actual signal strengths generated by the Longley-Rice method independent of the warning. Therefore, CTIA suggests that the examples proffered by NAB should instead be evaluated based on the actual proposal made by OET to determine what effect, if any, the changes would have on predicted coverage and population served.

B. CTIA's Evaluation Of OET's Software Change Using the "Disregard" Approach Demonstrates Only *De Minimis* Effects to Predicted Population Served.

To evaluate the impact of using *TVStudy*'s "Disregard" option, CTIA ran its own simulation using stations KMTP-TV and KWPX-TV.³⁴ For KMTP-TV, CTIA found that the population served was 6,663,570 using the "Assume Service" setting and 4,233,630 under the "Assume Interference" setting, numbers that are very similar to those derived by NAB. However, when CTIA selected "Disregard," which is the setting that OET suggested as a possible option for the new software, the resulting population served was 6,383,735, or 95.8% of the "Assume Service" population. Similarly, for KWPX-TV, CTIA's population served figures for "Assume Service," "Assume Interference," and "Disregard, were 4,091,544, 2,239,887, and 4,002,616 respectively. Therefore, for KWPX-TV, selecting "Disregard" preserves 97.8% of the station's "Assume Service" population. Contrary to NAB's claims, and consistent with CTIA's initial comments,³⁵ while the new OET software leads to changes in predicted population served,

³⁴ While CTIA attempted to replicate Mr. Tawil's effort, he did not provide all of the details on how he used the software and what settings he elected. However, CTIA made a "best efforts" attempt and, based on the similarity of CTIA's and Mr. Tawil's "Assume Interference" and "Assume Service" totals, CTIA believes the results are comparable.

³⁵ Comments of CTIA – The Wireless Association®, ET Docket No. 13-26, GN Docket No. 12-268, at 10-17 (March 21, 2013) ("CTIA Comments") (noting that changes to treatment of "flagged" cell data would result in changes to predicted coverage and population served, but such changes were *de minimis*.).

such changes are *de minimis* and, more importantly, appear to be more accurate and consistent with real-world, actual coverage and population served by broadcast television stations. Instead of predicted drops in population served of 36.4% and 34% as reported by NAB using the “Assume Interference” approach, when the OET software is used to model the actual proposal, considered by OET (using the “Disregard” option which predicts coverage based on the actual signal strength predicted by OET-69), the population served is reduced by 4.2% and 2.2% for the two stations provided as examples by NAB. Moreover, these “drops” in population served appear to be primarily due to the inclusion of terrain shielding effects for these two stations – leading to predicted coverage that comports more with coverage that actual over-the-air viewers will receive from these two TV stations.

C. OET’s Proposed Software Change In Treatment of “Flagged” Cells Is Appropriate, Consistent with OET-69 Methodology And Should Be Implemented.

Because NAB’s forecasts of lost coverage are apparently premised on a worst-case scenario regarding the Commission’s treatment of “flagged” cells, all of their conclusions about what the updated software means for TV coverage must be reconsidered. Using the approach highlighted by CTIA above, the impact on consumers is significantly less than that suggested by NAB. NAB issued a statement in June 2012 claiming that “17.8% of TV viewers receive their programming strictly over the air.”³⁶ Assuming that to be the case, the percentage of consumers that would actually be impacted by these small changes (4.2% and 2.2% of the 17.8%) in

³⁶ Press Release, National Association of Broadcasters, “Over-the-air TV Viewership Soars to 54 Million Americans,” (June 18, 2012), *available at* <https://www.nab.org/documents/newsroom/pressRelease.asp?id=2761>. CTIA would note that other parties have significantly reduced estimates for over-the-air viewing. *See e.g.*, <http://www.nielsen.com/us/en/reports/2013/state-of-the-media--the-nielsen-cross-platform-report-q3-2012.html> (last visited March 4, 2013) (Nielsen estimates over-the-air viewing at 9.8%). As such, CTIA would note that if these lower over-the-air viewing estimates are accurate, the percentage of consumers actually affected is even more diminished.

coverage would be even lower than the figures above indicate. In other words, the actual impact of the updated *TVStudy* on coverage area and population served is minimal, contrary to what NAB asserts.

Under these circumstances, CTIA believes that NAB (and its affiliated broadcasters) may wish to attempt to model OET's actual software changes to determine if there are, in reality, any substantial changes to predicted coverage and population served. CTIA's modeling of several cases, in major television markets, has only found *de minimis* effects to the predicted coverage and population served by television broadcasters. More importantly, CTIA continues to believe that a more faithful implementation of OET-69's methodology through implementing software requires OET to not "ignore" signal strength predictions, but instead to use the calculations provided by the methodology. CTIA therefore encourages OET to move forward with its proposed software changes, consistent with predictions made by the OET-69 methodology, to take into account the actual, predicted signal strength found for "flagged" cells. This approach will provide a more consistent and accurate representation of the OET-69 methodology.

IV. THE COMMISSION'S PROPOSAL TO ADOPT THE UPDATED OET-69 SOFTWARE IS CONSISTENT WITH THE SPECTRUM ACT.

The Spectrum Act stipulates that the Commission shall "make all reasonable efforts to preserve, as of the date of the enactment of this Act, the coverage area and population served of each broadcast television licensee, as determined using the methodology described in OET Bulletin 69 of the Office of Engineering and Technology of the Commission."³⁷ In its comments, NAB makes a variety of arguments generally asserting that the Commission would violate this provision of the Spectrum Act by adopting updated OET-69 software. Specifically, NAB asserts that the Commission purports to alter the "methodology" of OET-69 in violation of

³⁷ Spectrum Act at § 6403 (b)(2).

the Spectrum Act,³⁸ that the proposed software implementation would be arbitrary and capricious,³⁹ that the Spectrum Act “freezes” the methodology of OET-69 as of the date of enactment,⁴⁰ and that OET’s proposed changes violate the Commission’s rules of procedure.⁴¹ CTIA disagrees with these arguments and addresses each in turn.

A. Contrary to NAB’s Assertions, the Commission is Not Changing the OET-69 Methodology.

NAB’s argument that the Commission is barred from updating the OET-69 implementing software is premised on the notion that by releasing updated software, the Commission would be altering the “methodology” of OET-69 in violation of the Spectrum Act. Specifically, NAB argues that “the OET-69 ‘methodology’ includes both the contents of OET Bulletin 69 and the procedures – here, the software – for carrying it into effect.”⁴² However, the updated software is not a change in Commission methodology, but rather a more faithful implementation of the Longley-Rice model than was possible when the original OET-69 implementing software was first adopted.

NAB’s comments attempt to cast the updated implementing software as supplanting OET-69 through the use of the software’s name, *TVStudy*, as a substitute for OET Bulletin 69.⁴³

³⁸ NAB Comments at 3-12.

³⁹ *Id.* at 20-23.

⁴⁰ *Id.* at 3-6.

⁴¹ *Id.* at 17-18.

⁴² *Id.* at 3.

⁴³ *Id.* at 1-2 (“NAB, however, has serious concerns regarding OET’s surprising announcement that it intends to use a modified OET-69 methodology, referred to as *TVStudy*, to calculate existing broadcast licensees’ population coverage and interference for purposes of the impending incentive auction, in direct contravention of Commission rules . . .”).

Indeed, NAB argues “[t]hat OET has seen fit to call the new software *TVStudy*, rather than referring to it as ‘OET-69,’ betrays OET’s intent to replace the fully functional OET-69 methodology with an entirely new software package with features designed specifically for use in the incentive auction.”⁴⁴ Contrary to NAB’s assertions, however, OET-69 remains unchanged and would not be supplanted by the implementing software. *TVStudy* merely is an updated means of executing the directives of OET-69. It is understandable that, to avoid confusion, the Commission would give this software a distinct name so that users would not confuse the contents of OET Bulletin 69, the original implementing software, and the updated implementing software.

The OET also proposes a variety of other updates and corrections in the *TVStudy* software that would improve the ability of the Commission to implement OET-69 without changing the underlying methodology. For example, NAB argues that the proposed change in the default assumption for “flagged” error cells “constitutes a dramatic change in methodology” that violates the Spectrum Act.⁴⁵ However, OET-69 makes no mention of how the implementing software should treat cells flagged by the Longley-Rice algorithm, and thus this change could not possibly be construed as a change of the “methodology described in OET Bulletin 69.” Rather, Bulletin 69 gives OET the flexibility to determine how flagged cells are treated, and in this instance the Commission has properly found that the proposed method would more accurately predict real-world coverage. Indeed, as noted above, other OET Bulletins have treated flagged cells in different ways.⁴⁶ CTIA agrees with CEA that “[i]f the FCC concludes that a specific

⁴⁴ *Id.* at 6.

⁴⁵ *Id.* at 7.

⁴⁶ *See* CEA Comments at 13-14.

approach to flagged cells would lead to a more accurate model of broadcast coverage and populations served in the context of repacking, such a decision would be fully consistent with the methodology of OET-69.”⁴⁷

Similarly, the three-arcsecond terrain data supported by NAB is not part of the “methodology described in OET Bulletin 69,” as NAB argues.⁴⁸ To the extent OET-69 makes any specifications with regard to terrain data, it simply describes what the third-party database linked to the existing implementing software is capable of analyzing.⁴⁹ As indicated in the Public Notice and as commenters have observed, the three-arcsecond terrain database linked to the current implementing software is no longer supported or updated; it therefore cannot be presumed to be accurate and it would be unreasonable for the Commission to continue relying on it.⁵⁰ Rather, use of one-arcsecond data is appropriate and will produce more accurate results.

OET-69 also contains no specification as to the particular census data to be used by its implementing software.⁵¹ NAB states that with regard to census data, “Congress clearly favored predictability and industry experience over other considerations.”⁵² First, Congress’ decision to preserve broadcast stations’ coverage and population served as of February 2012 does not

⁴⁷ *Id.* at 15.

⁴⁸ NAB Comments at 9 (“Accordingly, three-arcsecond data is an integral part of the OET-69 methodology, which cannot be changed for purposes of the incentive auction under Section 6403(b)(2) of the Spectrum Act.”).

⁴⁹ OET Bulletin No. 69, “Longley-Rice Methodology for Evaluating TV Coverage and Interference,” at 6 (Feb. 6, 2004) (“OET Bulletin 69”) (“The FCC computer program is linked to a terrain elevation database with values every 3 arc-seconds of latitude and longitude.”).

⁵⁰ Public Notice at 4; CEA Comments at 4-5; Communications Technologies Comments at 1.

⁵¹ *See* OET Bulletin 69.

⁵² NAB Comments at 11.

demonstrate any preference for 2000 or 1990 census data over 2010 data—indeed, measuring preservation of coverage using outdated data that no longer reflects actual population distribution would seem to contravene the statute by “preserving” coverage to population that did not exist as of February 2012 and ignoring actual population centers that are not represented in the outdated Census data. Second, Congress required the Commission to make “reasonable efforts” in using OET-69 to replicate 2012 coverage. It is patently unreasonable for the Commission to rely on outdated Census data that is plainly an inaccurate representation of today’s (or 2012’s) population patterns. While NAB argues that Section 73.616(e)(1) of the Commission’s rules mandates that the Commission use 2000 census data in implementing OET-69,⁵³ that rule does not govern the current incentive auction process, and the FCC is seeking comment on whether to update the implementing software with more recent, accurate population data.

Similarly, the other updates proposed by OET are not changes to the OET-69 “methodology” and do not violate the Spectrum Act. NAB alleges that the use of antenna beam tilt values in the CDBS record violates the Spectrum Act.⁵⁴ Much like the three-arcsecond terrain data used by the U.S. Geological Survey, OET-69’s discussion of antenna beam tilt describes the capabilities of the implementing software as they existed at the time of OET-69’s publication.⁵⁵ It is not stated to be “expressly required” in OET-69. Further, it is clear that the correction by OET of known errors in its OET-69 software, such as its incorrect calculation of depression angles based on antenna height above ground, is plainly not a change in Commission “methodology” as OET would not be doing anything that it didn’t intend to do from the outset.

⁵³ NAB Comments at 10-11.

⁵⁴ *Id.* at 10.

⁵⁵ OET Bulletin 69 at 13 (“The vertical patterns used in the FCC computer program are shown in Table 8. They represent typical patterns.”).

As stated above, it would be plainly unreasonable for the Commission to proceed with a software implementation that had known mistakes in it.

None of the changes proposed by the Commission in the Public Notice and explained above alter the “methodology” of OET-69. Instead, this updated software is a more faithful implementation of the Longley-Rice model than was possible when OET-69 was first adopted. The updated software provides timely and accurate population data (from the 2010 Census) and a one-arcsecond database that better matches the actual operating environment associated with broadcast television. The proposed changes also result in consistency (*e.g.*, changes to treatment of inaccurate data, beam tilt and the level of precision) and correct unintended errors that were made in the initial software. In other words, the Commission is not proposing to do anything that it would not have done at the time of OET-69’s implementation, but for the limitations of software and data at the time.

Not only would the Commission not be contradicting OET-69 by making the software updates proposed in the Public Notice, but there is also no basis for the argument that the Longley-Rice model and its implementing software are so intertwined that one cannot be changed without changing the other. Indeed, OET-69 specifically contemplates that parties could implement the Longley-Rice model using *their own* computer programs.⁵⁶ NAB simply cannot square the language in OET-69, which allows parties to develop and utilize their *own* software to calculate OET-69, with the position it takes that requires absolutely no changes to the software that implements OET-69. Not only is this unreasonable but it is completely inconsistent with the plain language in OET-69 that permits parties to develop their own software. CTIA therefore believes that there is no basis for NAB’s argument that the

⁵⁶ OET Bulletin 69 at 5 (“Those desiring to implement the Longley-Rice model in their own computer program to make these calculations should consult NTIA Report 82-100 . . .”).

implementing software is part and parcel of OET-69, and as such these necessary software updates cannot be construed as changes to methodology.

B. OET’s Proposed Update of the Software is Reasonable.

NAB argues that OET’s proposed software update is arbitrary and capricious under the terms of Section 6403(b)(2), but its argument is premised on an erroneous reading of the statute. Contrary to NAB’s claim, OET’s proposed action is entirely reasonable. In fact, in light of the flaws and limitations of the current software, it may well be unreasonable for OET to refrain from updating the software.

Section 6403(b)(2) does not “direct the Commission to conduct an incentive auction in a manner that preserves the coverage as calculated by the OET-69 methodology on February 22, 2012,” as NAB represents.⁵⁷ Rather, what Section 6403(b)(2) directs the Commission to do is to “*make all reasonable efforts* to preserve, as of the date of the enactment of this Act [February 22, 2012], *the coverage area and population* served of each broadcast television licensee, as determined using the methodology described in OET Bulletin 69”⁵⁸ NAB’s interpretation of the statute mis-applies the phrase “date of the enactment of this Act” to the term “methodology described in OET Bulletin 69.” But the plain text of the provision clearly demonstrates that “the date of the enactment of this Act” applies to the “coverage area and population served,” as shown by the placement of the “date of the enactment of this Act” immediately before the “coverage area and population served.”⁵⁹ In other words, the statute directs the Commission to take “all reasonable efforts” to ensure that the *actual coverage* that

⁵⁷ NAB Comments at 20.

⁵⁸ Spectrum Act at § 6403 (b)(2) (emphasis added).

⁵⁹ See Section IV.C, *supra*, for further discussion on the plain text of Section 6403(b)(2).

existed on February 22, 2012 is maintained, not that this coverage be estimated using a particular software product as it existed on the date of enactment. Because OET's proposed software update does not have "the opposite effect" of what Section 6403(b)(2) intended,⁶⁰ it is not arbitrary or capricious under the statute.

In fact, not only is what OET is proposing to do within the bounds of the Section 6403(b)(2), it is entirely reasonable as a policy matter. OET is proposing to implement software that will make its calculations more precise, and ground those calculations in data that better reflects the actual "coverage area and population served" as of February 22, 2012. There is, for example, no plausible basis for arguing that Census data from more than 10 years ago provides a better or more accurate picture of the "coverage area and population served" in 2012 than would 2010 Census data. By updating the software so that its calculations are more accurate, OET is in fact fulfilling Congress' directive to "make all reasonable efforts to preserve . . . the coverage area and population served."⁶¹

Improved precision and accuracy are goals that OET should strive for, and the D.C. Circuit has recognized the FCC's prerogative in doing so.⁶² Indeed, given the flaws and limitations of the current OET-69 software,⁶³ it may well be *unreasonable* for OET not to take steps to improve that software in advance of the incentive auction. OET's proposed action thus is reasonable and entirely consistent with Section 6403(b)(2).

⁶⁰ NAB Comments at 20 (arguing OET's implementation of the proposed software would have the opposite effect of what Congress intended).

⁶¹ See Spectrum Act at § 6403 (b)(2).

⁶² See *Costa de Oro Television, Inc. v. FCC*, 294 F.3d 123, 129-30 (D.C. Cir. 2002) (upholding Commission decision to encourage use of Longley-Rice maps instead of Grade B contour maps and noting Longley-Rice maps were "more accurate").

⁶³ See, e.g., Comments of CTIA.

C. The Spectrum Act Does Not Freeze OET-69 As Of The Date Of Enactment.

Throughout its comments, NAB argues the Spectrum Act freezes the methodology of OET-69 as of the date of the Act's enactment, February 22, 2012.⁶⁴ However, as CTIA points out here, the proposed software change is not a change of OET-69's "methodology."⁶⁵ Furthermore, NAB presents no argument that the Spectrum Act prohibits OET from addressing flaws in its *implementation* of the OET-69 methodology. Thus, OET's update of the software is not prohibited by Section 6403(b)(2).

But even if the software implementation could be considered a change in "methodology," OET would still be entirely within its rights to adopt the proposed change. Contrary to NAB's reading of the Spectrum Act, the statute does not freeze OET-69 as of February 22, 2012. First, Congress' inclusion of a reference to the OET-69 technical bulletin, which is issued and maintained by OET and amended from time to time, gives rise to the natural implication that Congress intends the statute to refer to the bulletin as it evolves over time. Congress must be presumed to be aware of the changeable nature of OET-69.⁶⁶ Indeed, it is instructive that the

⁶⁴ See NAB Comments at 3-6, 20.

⁶⁵ NAB also incorrectly asserts that the phrase "methodology described in OET Bulletin 69" is a term of art. NAB Comments at 4. A "term of art" is "a word or phrase having a specific, precise meaning in a given specialty, apart from its general meaning in ordinary contexts." *Black's Law Dictionary* (9th ed. 2009). The phrase "methodology described in OET Bulletin 69" does not constitute a "term of art." No court has ever passed on this phrase as a "term of art," and the only place the phrase appears in the U.S. Code is in the Spectrum Act. Because "methodology as described by OET Bulletin 69" has not been widely used in other statutes or defined in other tribunals, it does not have an established meaning equivalent to a "term of art." See *Burgess v. United States*, 553 U.S. 124, 130 (2008) (determining "felony drug offense" was a term of art based on other statutes employing the term); *McDermott Int'l, Inc. v. Wilander*, 498 U.S. 337, 342 (1991) (determining "seaman" was a term of art by examining its usage in maritime law and by admiralty courts).

⁶⁶ See *Hall v. United States*, 132 S. Ct. 1882, 1889 (2012) ("We assume that Congress is aware of existing law when it passes legislation"); *United States v. Mueller*, 463 F.3d 887, 891 (9th Cir. 2006) ("Congress is presumed to have acted with awareness of the relevant legal

D.C. Circuit has specifically held that the Commission had the power and authority to update the Longley-Rice model when necessary to do so.⁶⁷ OET-69 is “precisely the type of technical issue” on which courts recognize that the exercise of the agency’s expertise is appropriate.⁶⁸ Absent specific language divesting OET of the ability to make changes to OET-69, there is thus no basis for interpreting the Spectrum Act as removing the Commission (and OET)’s existing delegation of authority.

Second, as discussed above, the plain text of Section 6403(b)(2) cannot be interpreted as imposing a freeze on modifications to the methodology. The placement of the modifier “as of the date of enactment of the Act” directly before “coverage area and population” makes plain that the limiting phrase “date of enactment of the Act” applies to “coverage and population”—not to the “methodology described in OET Bulletin 69,” which appears a clause later. If Congress had intended to freeze the methodology of OET-69 in amber, it would have specified this in the text. Indeed, it has done so before.⁶⁹ Here, however, Congress did not specifically

context when it passes legislation.”) (citing *Cannon v. University of Chicago*, 441 U.S. 677, 696 (1979)). Indeed, NAB is well aware of this presumption. NAB Comments at 5 n.16 (citing *Lorillard v. Pons*, 434 U.S. 575, 580 (1978); *Comm’r v. Estate of Noel*, 380 U.S. 678, 682 (1965)).

⁶⁷ See *EchoStar Satellite LLC v. FCC*, 457 F.3d 31 (D.C. Cir. 2006) (upholding FCC’s updates to Longley-Rice); cf. *National Min. Ass’n v. Mine Safety and Health Administration*, 116 F.3d 520, 526 (D.C. Cir. 1997) (“Congress frequently adopts specific safety standards and at the same time delegates the task of supplementing the standards to agency expertise. The Mine Act specifically provides that the standards specified by Congress are not exhaustive. Section 101(a) of the Act authorizes the Secretary to “develop, promulgate, and revise as may be appropriate, improved mandatory health or safety standards for the protection of life and prevention of injuries in coal or other mines.” 30 U.S.C. § 811(a). To interpret the safety standards provided by the Act as necessarily exclusive of more extensive protections is to annul the agency’s authority under Section 101(a).”).

⁶⁸ See *Costa de Oro Television Inc. v. FCC*, 294 F.3d 123, 129 (D.C. Cir. 2002).

⁶⁹ See, e.g., 49 U.S.C. § 5303(4)(A) (“[I]n the case of an urbanized area designated as a nonattainment area for ozone or carbon monoxide under the Clean Air Act (42 U.S.C. 7401 et

provide for a determination based on the methodology described in OET Bulletin 69 *as of the date of the enactment of the Spectrum Act*. By reading Section 6403(b)(2) to implicitly include such a requirement, NAB effectively reads a term into the statute that does not exist.

Third, in claiming that Congress “presumptively intended that the version of OET-69 in existence on February 22, 2012 . . . be used to calculate coverage area and population served,”⁷⁰ NAB’s interpretation of Section 6403(b)(2) leads to an absurd result: that Congress has forbidden OET from updating OET-69, absent future statutory permission to do so. Had Congress wished to adopt the methodology as it existed on the date of enactment, it could have done so using the type of language indicated above, which would not have impacted OET’s ability to modify OET-69 for other purposes going forward. But by arguing that Section 6403(b)(2)’s general reference to “Bulletin 69” requires OET-69 to be maintained precisely as it existed on February 22, 2012, NAB’s reading of the provision would prevent OET from *ever* making changes to the OET bulletin (absent further legislation). It is highly unlikely that Congress intended to implicitly and indefinitely divest OET of the ability to modify OET-69 as the need arose.

Thus, for the reasons detailed above, Section 6403(b)(2) does not freeze OET-69’s methodology as of the date of the Spectrum Act’s enactment. Nevertheless, OET’s authority to make changes to OET-69’s methodology is not at issue here because the software update does not constitute such a change.

seq.) as of the date of enactment of the SAFETEA-LU, *the boundaries of the metropolitan area in existence of such date of enactment shall be retained.*”) (emphasis added). The critical difference between this language and the language of the Spectrum Act is plain. The Clean Air Act addresses and freezes *legal requirements*, whereas the Spectrum Act talks about the importance of accurately modeling the actual coverage and population that existed as of a date certain.

⁷⁰ NAB Comments at 5.

D. NAB's Procedural Arguments Against The Proposed Changes To OET-69 Are Also Without Merit.

NAB's procedural arguments against the change to OET-69 also do not prevent OET from making necessary updates to the implementing software.

NAB claims that the proposed changes to OET-69 should be made by the Commission and not OET, but the proposed action falls well within OET's delegated authority. In NAB's view, "because the incentive auction is a novel and unprecedented proceeding, and the Commission has never articulated its interpretation of Section 6403(b) of the Spectrum Act,"⁷¹ OET's proposed changes to OET-69 must be referred to the Commission for disposition. However, referral to the Commission is unnecessary. While the incentive auction may present novel and complex issues in other contexts, the immediate issue here is nothing more than an update to the software used to implement the OET-69 methodology. This is precisely the type of technical issue that the Commission has delegated to OET for consideration,⁷² and the changes to the software raise no novel or complex issues on their own. The fact that the FCC has, in the past, made changes to the OET-69 methodology following consideration at the full Commission does not mean that every modification of OET-69 must be subject to the same procedures. Moreover, the example cited by NAB is inarguably a change in the methodology.⁷³ As argued throughout these reply comments, what OET proposes to do here is not a change in methodology. OET's proposed changes to OET-69 fall well within OET's delegated authority, and therefore referral to the Commission is not required.

⁷¹ NAB Comments at 17.

⁷² See 47 C.F.R. § 0.31(e) ("to develop and implement procedures to acquire, store, and retrieve scientific and technical information useful in the engineering work of the Commission").

⁷³ NAB Comments at 18 (citing Third Periodic Review, 23 FCC Rcd 2994, 3067 (2007)).

Even if consideration by the full Commission is not required as a legal matter, NAB argues that changes to OET-69 should be explored by the full Commission because of the importance of the overarching Spectrum Act and the incentive auction that it creates.⁷⁴ But the major policy issues surrounding the incentive auction and the implementation of the Spectrum Act already are being considered by the full Commission. NAB's theory that highly technical updates to implementing software should be vetted by the full Commission simply because they are associated with a high-profile proceeding has no limiting principle. It would require every sub-category of every "high-profile" issue to be pulled away from Bureaus and Offices that possess the relevant expertise, and given instead to the full Commission to decide. Such a policy would vastly increase the workload of the Commissioners, thereby slowing Commission action and unreasonably burdening its docket. Indeed, the entire purpose of delegated authority is to ensure that decisions are made in the first instance by the subject matter experts.

NAB further asserts that because the Commission's rules require any change to OET Bulletin 69 to be published in the Federal Register, this evinces an acknowledgement by the Commission that changes to OET-69 "should be made via formal, Commission-level rulemaking proceedings."⁷⁵ But it is possible to publish something in the Federal Register that is not the product of a formal, Commission-level rulemaking proceeding. Indeed, the Public Notice seeking comments on OET's proposed changes to OET-69 was published in the Federal Register.⁷⁶

⁷⁴ NAB comments at 19.

⁷⁵ *Id.* at 18.

⁷⁶ Office of Engineering and Technology Seeks Comment on Updated OET-69 Software, 78 Fed. Reg. 11129 (Feb. 15, 2013).

Finally, NAB argues that the Commission should have sought comments on OET-69 as a component of the incentive auction NPRM, instead of allowing OET to issue a separate Public Notice while the comment cycle on the NPRM was underway.⁷⁷ But regardless of the timing of the comment cycle, the incentive auction docket is far from closed, and there is no bar whatsoever that prevents NAB from alerting the Commission if it believes that the proposed changes to OET-69 require a change in NAB's position in the incentive auction docket. Indeed, NAB here filed its comments on the OET-69 software update proposal in both the incentive auction docket (GN Docket No. 12-268) and the OET docket (ET Docket No. 13-26), which illustrates this point quite starkly. Accordingly, NAB has ensured that its views on the proposed changes to OET-69 will be considered in the incentive auction proceeding.

V. CONCLUSION

For the reasons provided herein, OET should adopt the proposed changes to OET-69's software.

⁷⁷ NAB Comments at 19.

Respectfully submitted,

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